

The Impact of Alternative Search Mechanisms on the Effectiveness of Knowledge Retrieval

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ABSTRACT

Intangible knowledge assets now account for over 70% of organizational assets. With this has come the need for organizations to invest heavily in knowledge management systems (KMS). For a KMS to be effective, it must be utilized. A critical part of being utilized is having an effective retrieval mechanism. Due to the complexity of knowledge objects stored in KMSs, traditional data retrieval methods utilizing keyword search capabilities may not be the optimal retrieval mechanism for retrieving knowledge. The purpose of this dissertation is to determine if the cognitive loading of a search mechanism impacts the effectiveness of information retrieval from knowledge management systems. To answer that question, two search interface mechanisms are created: one with a text-based keyword mechanism similar to most current search interfaces and one with a visual tree-view hierarchy-based search mechanism. A laboratory study is performed to compare measures of users' accuracy, timeliness, work effort, and satisfaction on those two mechanisms for three different search scenarios.

Theories developed in cognitive psychology based on the recall versus recognition paradigm suggest that the hierarchical nature of the visual tree-view search interface mechanism will generate more accurate information. It is also predicted that the visual tree-view search interface will result in slower searches, but that trade-off will offer more accurate information to the knowledge worker. These predictions lead to directional hypotheses that can be tested in an experimental setting. The results from this experiment show retrieval accuracy is significantly increased by utilizing a visual hierarchical-based search interface. The results also show there is a difference in time and effort but little to no difference in satisfaction between the two search interfaces. Based on these findings, it is posited that knowledge management systems that are designed with more effective retrieval mechanisms (i.e., visual search interfaces) can reduce organizational costs by increasing relevant information retrieved during the search process and decreasing the wasted time spent investigating information that does not support the current knowledge requirements of the user.

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